



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/750,752 | 01/02/2004 | Wein-Town Sun | 250122-1140 | 1840 |
| 24504 | 7590 | 12/16/2004 | EXAMINER | |
| THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 100 GALLERIA PARKWAY, NW STE 1750 ATLANTA, GA 30339-5948 | | | FENTY, JESSE A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2815 | |

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

10

| | | | |
|------------------------------|-------------------------------|--------------------------------|--|
| Office Action Summary | Application No. 10/750,752 | Applicant(s) SUN, WEIN-TOWN | |
| | Examiner Jesse A. Fenty | Art Unit 2815 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-20 is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-11, 13 and 14 is/are rejected.
- 7) ☒ Claim(s) 5, 6 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>01/02/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4, 7, 8 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Katoh et al. (U.S. Patent No. 5,963,785).

In re claims 1 and 8, Katoh (esp. Fig. 3) discloses a semiconductor system and method of manufacturing the same, comprising:

a plurality of isolation substrates (9, 11), each isolation substrate having a circuit deposition region and a substrate-combining region;

a plurality of circuits (3, 7) formed on the circuit deposition regions;

a plurality of substrate-connecting elements (13, 17) formed to connect the substrate-combining regions; and

a plurality of electrical connecting elements (21, 23) formed to electrically connect the circuits formed on the different circuit deposition regions.

In re claims 2 and 4, Katoh discloses the device of claim 1. The limitations, “formed by heat fusing or laser” and “formed by laser fusing” refer to the processes for making this product. Applicant is reminded that, a “product by process” claim is directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*,

Art Unit: 2815

173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw makes clear.

In re claims 7 and 14, Katoh discloses the device and method of claims 1 and 8 respectively, wherein the materials of the isolation substrates are glass (column 10, lines 65-67).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh as applied to claim 1 above, and further in view of Liao et al. (U.S. Patent No. 6,689,636 B2).

In re claims 3 and 10, Katoh discloses the device and method of claims 1 and 8 respectively, but does not expressly disclose the connecting elements being gold wires. Liao (esp. Fig. 8B) discloses the use of gold wires (30) in semiconductor packaging technology. It would have been obvious for one skilled in the art at the time of the invention to connect the

Art Unit: 2815

substrates of Katoh with gold bond wires as disclosed by Liao for the purpose, for example, of providing enhanced electrical connections between the two surfaces (Liao; column 5, lines 34-37)

5. Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh as applied to claim 8 above, and further in view of Nishiyama (US 2002/0192867 A1).

In re claims 9 and 11, Katoh discloses the method of claim 8, wherein substrate-connecting elements and the electrical connecting elements are formed by cutting but does not expressly disclose the elements being formed by laser. Nishiyama (sections [0073], [0074]) discloses using a laser beam to dice a semiconductor wafer structure. It would have been obvious to one skilled in the art at the time of the invention to use a laser beam as disclosed by Nishiyama to dice the substrate of Katoh for the purpose of simplifying the production process by using a laser cut instead of a traditional cutting device.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh as applied to claim 8 above, and further in view of Smith (US 2001/0031514 A1).

In re claim 13, Katoh discloses the method of claim 8, but does not expressly disclose materials of the first and second isolation substrates comprising plastic. Smith discloses a method of combining various types of semiconductor devices in which a number of substrate materials may be used, including plastic. It would have been obvious for one skilled in the art at the time of the invention to use a plastic substrate as disclosed by Smith for the device regions of

Art Unit: 2815

Katoh for the purpose, for example, of enhancing the manufacture of certain devices such as flat panel displays (section [0065], lines 4-6).

Allowable Subject Matter

7. Claims 5, 6 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claim 15-20 are allowed.

a. The following is a statement of reasons for the indication of allowable subject matter: In re claim 15, the method of manufacture including at least forming a plurality of substrate-connecting elements, wherein the first substrate substrate-combining region contacts the second substrate-combining region is neither anticipated nor obvious over the prior art of record.

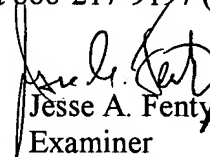
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse A. Fenty whose telephone number is 571-272-1729. The examiner can normally be reached on 5/4-9 1st Fri. Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 571-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2815

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jesse A. Fenty
Examiner
Art Unit 2815